



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/914,181	12/07/2001	Robert Andre	AT-19.PCT/US	9542
466	7590	02/14/2005	EXAMINER	
YOUNG & THOMPSON 745 SOUTH 23RD STREET 2ND FLOOR ARLINGTON, VA 22202			AFTERGUT, JEFF H	
			ART UNIT	PAPER NUMBER
			1733	

DATE MAILED: 02/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/914,181

Applicant(s)

ANDRE ET AL.

Examiner

Jeff H. Aftergut

Art Unit

1733

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 December 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 9-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 9-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 August 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Claim Rejections - 35 USC § 103

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. Claims 9, 11, 12, 14, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over E.P. 897,174 in view of E.P. 911,803 and Newsam (newly cited, previously of record) and optionally further taken with any one of Hom, Whitemore et al or Beggs et al.

E.P. '174 taught a process for forming an acoustical panel which included the steps of providing a mold 18, applying a mesh layer of acoustical fabric material to the mold 12, applying reinforcing filamentary material via a winding operation onto the layer of acoustical material (see Figures 6B and 7B and note layers 14, 114, 214, and 314), applying a layer of honeycomb material 22 over the strengthening layer of fibers 14, 114, 214, and 314, and applying a reflector layer upon the honeycomb layer (see layer 24, Figure 7D, 7E). Applicant is additionally referred to Figures 8A-8E for a description of the overall operation for application of the various layers to the mold in the manufacture of the acoustical panel. The reference failed to teach that one skilled in the art would have applied the reinforcement (strengthening) layer of fibers upon the mold prior to the application of the acoustical cloth onto the same in the manufacture of the acoustical panel. The reference additionally failed to teach that the acoustical mesh material applied to the mold would have been formed from mineral or organic fiber.

E.P. '803 taught that it was known to incorporate the strengthening layer of reinforcement either under the acoustical fabric material or over the fabric material

Art Unit: 1733

(such that the acoustical fabric material was not left exposed in the finished panel assembly), see column 1, lines 32-40, column 2, lines 36-43, column 1, lines 50-53, for example. It should be noted that the entire assembly was assembled together with adhesive and then the entire assembly was cured with the application of heat and pressure in an oven/vacuum bag. Again, the reference to E.P. '803 failed to teach that one skilled in the art would have understood to employ a mineral of polymer fiber for the microporous cloth but instead chose to employ a stainless steel cloth material.

The reference to Newsam suggested that in the art of manufacturing an acoustical panel, it was known to employ as an alternative to a stainless steel microporous cloth material a microporous material formed from polymeric material. More specifically, applicant is referred to column 2, lines 23-24 where the reference suggested that stainless steel filaments would have been useful for the microporous cloth material employed and column 2, lines 14-17, where the reference suggested that the fabric material employed utilized a polyester filament (organic). Where, as here, two equivalents were known for the same desired function, an express suggestion of the substitution of one for the other is not needed to render such substitution obvious, In re Fout, 213 USPQ 532, In re Siebentritt, 152 USPQ 618. In order to provide better protection for the acoustic fabric, it would have been obvious to one of ordinary skill in the art at the time the invention was made to dispose the reinforcement and strengthening materials against the mold initially followed by application of the acoustical mesh material in E.P. 897,174 as such would have afforded one the benefits of increased service life for the acoustical panel as suggested by E.P. 911,803 wherein

the microporous fabric was formed from organic fibers as an alternative to metal fibers as suggested by Newsam. It should be noted that the heat and pressure applied by E.P. '803 would have been understood to have been performed in an autoclave as such was conventionally employed in the manufacture of fiber reinforced composite attenuation panels and was the commonplace manner in which one applied heat and pressure to assemble the layers together.

While it is believed that one skilled in the art would have readily discerned that the assembly would have been disposed in an autoclave to apply the appropriate pressure to the assembly during curing of the panel assembly as such was commonplace in the art (and it is taken as conventional in the art of bonding a panel assembly to utilize the same), the reference to any one of Hom, Whitemore et al, or Beggs et al suggested that those skilled in the art at the time the invention was made would have incorporated an autoclave to secure the various layers together. Applicant is more specifically referred to Hom at column 4, lines 28-44 and column 3, lines 45-51, Whitemore et al at column 3, lines 16-31, or Beggs et al at column 4, lines 10-34 all suggested that in the formation of an acoustical panel one skilled in the art would have incorporated an autoclave to apply the pressure and heated during the same in order to cure the resin in the assembly to make the finished panel. It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the techniques of any one of Hom, Whitemore et al, or Beggs et al to provide for the heat and pressure necessary to cure the resin layers in the formation of an acoustical panel wherein the reinforcing material was provided on the exterior of the panel as suggested

Art Unit: 1733

by E.P. 911,803 in the process of making an acoustical noise attenuation panel as taught by E.P. 897,174 wherein the fibers of the microporous sheet included polymeric fibers as an alternative to steel fibers as taught by Newsam.

3. Claims 10, 13, 15, 16, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over the references as set forth above in paragraph 2 further taken with Daunt et al and Adee et al (both newly cited).

The references as set forth above form a noise suppression panel which included the use of a form onto which a reinforcing layer was formed wherein the form was in the shape of a cylindrical mandrel or drum. The references failed to teach that one skilled in the art after the lay up of the composite material would have cured the same in an autoclave followed by formation of perforations in the same (holes) via a piercing operation wherein the piercing operation took place on the forming tool (the drum or mandrel).

Adee et al suggested that it was known at the time the invention was made to cure a resin impregnated fiber reinforced material which was in a curved configuration prior to the drilling of holes in the same in the manufacture of a perforated sheet for a sound attenuation panel. The curing of the material prior to the perforation operation is said to be performed in order to ensure that the composite material has a set shape prior to the perforating operation as shaping the material subsequent to the perforation operation was found to be difficult in the art. The reference suggested as depicted in Figure 5A and as described at column 31-43 that one skilled in the art would have desired to form a curved perforated sheet by curing the composite material in a suitable

Art Unit: 1733

tooling prior to the perforation operation. The applicant is advised that such tooling would have included the mandrel of E.P. '174. The reference subsequent to the curing of the composite material, suggested that a suitable maskant was applied to the curved composite material and the assembly was subjected to the drilling operation via a sand and/or grit blasting operation. The reference failed to teach that the cured part remained upon the tooling (the mandrel) during the perforation operation. It should be noted, however that one skilled in the art would have understood that there was a relative movement required between the part and the nozzle which directed the grit in the formation of the holes in the material, see column 6, lines 8-12. The reference is silent as to what type of tooling would have been utilized during the grit blasting operation to provide the relative movement.

Daunt et al suggested that a composite fiber reinforced material which was in the form of a cylinder would have been provided with perforations therein via a machining operation wherein the sound attenuation member was formed from a fiberglass laminate which included epoxy resin and wherein holes were formed in the same while the cylindrical member was supported on a drum (during hole formation). The reference suggested that a laser operation would have been performed upon the material. During the piercing operation there was relative movement between the cylindrical part and the piercing tool by disposing the part on a cylindrical form or mandrel and rotating the mandrel during the piercing operation. Note that in E.P. '174 the part was formed upon a cylindrical mandrel. As the reference to Adey et al suggested that the part would have been cured while disposed upon such tooling, one skilled in the art would have

Art Unit: 1733

understood that the tooling (the cylindrical mandrel) would have merely been kept in place for the piercing operation. As one skilled in the art would have understood that it was necessary to provide relative movement between the part and the piercing device which was provided by incorporation of a drum or mandrel on the part, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate a form or tool onto which one perforated the material wherein such form or tool was desirably the same form or tool which was used during lay up and curing of the material as suggested by Daunt (the use of a tool during the perforation operation which was a cylindrical mandrel) and Adee (who clearly suggested that the material would have been cured prior to the perforation operation on a tool like that of E.P. '174) in the process of making a perforated composite cylindrical member for a noise attenuation panel.

Response to Arguments

4. Applicant's arguments with respect to claims 9-18 have been considered but are moot in view of the new ground(s) of rejection.

The applicant essentially argues that: (1) the invention of claim 9 incorporates a non-metallic fiber material for the microporous screen material which was not previously suggested by the prior art applied, and; (2) the invention of claim 10 requires that the reinforcing material be cured prior to the perforation operation as such was necessary to ensure the maintaining of the shape of the material wherein the material was on the mold during the piercing operation. Regarding the first argument, the reference to Newsam (US Patent 4,504,346) clearly expressed that as an alternative to stainless

Art Unit: 1733

steel fibers one skilled in the art would have incorporated a polyester fiber material for the microporous material. As expressed above, the substitution of one known alternative for another with the same desired results would have been obvious wherein an express reason for the substitution of one for the other is not needed to render such substitution obvious.

Regarding the arguments relating to claim 10, note that the newly cited references to Adee et al and Daunt et al suggested expressly that the material used for the cylindrical reinforcement for the perforated acoustical panel would have been disposed on a tooling during curing and would have been cured prior to the perforation operation (Adee et al) wherein there was provided a means to ensure relative movement of the article to be perforated and the perforating device (Adee et al) wherein the reference to Daunt et al provided for the relative movement of the cylindrical shaped material by disposing the material upon a drum or cylindrical mandrel during the perforating operation. To retain the cured composite material upon the mandrel of form in the perforating operation after the curing upon the same would have been obvious to one of ordinary skill in the art as it would have eliminated the need to remove the tooling used in curing and replace it with the drum for perforating followed by removal of the perforating drum (it would have eliminated a step). Additionally, the reference to Adee et al clearly expressed that one skilled in the art would have incorporated a means to move the components relative to each other and clearly expressed that the composite material was cured prior to the formation of the openings and/or holes in the assembly.

No claims are allowed.

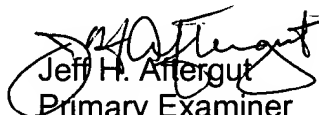
Art Unit: 1733

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeff H. Aftergut whose telephone number is 571-272-1212. The examiner can normally be reached on Monday-Friday 7:15-345 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Blaine Copenheaver can be reached on 571-272-1156. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Jeff H. Aftergut
Primary Examiner
Art Unit 1733

JHA
February 8, 2004